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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/930,640	08/15/2001	Andre M. E. Nel	10001090-1	1838

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EXAMINER	
STERRETT, JONATHAN G	
ART UNIT	**PAPER NUMBER**
3623	
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05/29/2007	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	09/930,640	NEL, ANDRE M. E.	
	Examiner	Art Unit	
	Jonathan G. Sterrett	3623	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *10 January 2007*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-24* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-24* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Summary

1. In view of the appeal brief filed 10 January 2007, PROSECUTION IS HEREBY REOPENED. A new ground of rejection is set forth below.

To avoid abandonment of the application, appellant must exercise one of the following two options:

(1) file a reply under 37 CFR 1.111 (if this Office action is non-final) or a reply under 37 CFR 1.113 (if this Office action is final); or,

(2) request reinstatement of the appeal.

If reinstatement of the appeal is requested, such request must be accompanied by a supplemental appeal brief, but no new amendments, affidavits (37 CFR 1.130, 1.131 or 1.132) or other evidence are permitted. See 37 CFR 1.193(b)(2).

Response to Arguments

2. The applicant's arguments regarding Claims 1-24 have been fully considered are persuasive and the claim rejections withdrawn. However, in view of the newly cited references please see the new 35 USC 103(a) references below.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

4. **Claims 1-17** are rejected under 35 U.S.C. 103(a) as being unpatentable over **Muralidharan**, B; "Dynamic Routing and Service Network Design for less-than-truckload (LTL) Motor Carriers", 1997, Iowa State University, Ames, Iowa, PhD Dissertation, pp.1-94. (hereinafter **Muralidharan**)

Regarding **Claim 1**, Muralidharan teaches:

A computer-implemented method of allocating freight-haulage jobs

Page 23 line 1-5, a decision support tool (i.e. a computer implemented method) provides a way for LTL managers to plan a network (i.e. allocate freight haulage jobs in the LTL network).

receiving from one or more users respective capacity attributes, including position information, route information and excess capacity information specifying available freight-hauling capacity, for each mobile carrier entity in a set of freight-hauling mobile carrier entities;

page 32 para 3.3, the trailer object in the computer simulation (i.e. each trailer is a mobile carrier entity since it represents the individual carriers in a LTL network used for hauling freight) contains excess capacity information (i.e. the total volume in the trailer object), position information (trailer origin and destination are position information in the trailer object) and route information (page 30 para 3.2.5, routes for the trailers are broken down into categories, opportunistic direct service, primary service and direct

service – see Figure 3.1 for examples of the routes for a trailer between Boston and Los Angelese).

computing a projection of available carrier capacity based upon the received mobile carrier capacity attributes; and

page 34 lines 12-18, the calibration of the simulation computes a projection of available carrier capacity (the number of trailers that shipped based on the inputs to the simulation are available carriers since all available trailers loaded were shipped). The calibration of the simulation takes into account the individual trailer capacity, trailer routing and position information to determine throughput through the LTL network. – see also page 24 line 8-11 and line 18-20.

identifying one or more freight haulage job candidates from the set of mobile carrier entities based upon the computed projection of available carrier capacity and shipping attributes for each of a set of freight haulage jobs.

Page 32 para 3.2.6, the model identifies the trailers dispatched and those that are open (i.e. have capacity for additional freight) from all the trailers that were dispatched (i.e. from the set of mobile carrier entities) – this is based upon the simulation running for all the trailers and the associated shipments for each of a set of bills that are shipped over the LTL network (i.e. for each of a set of freight haulage jobs). – seel also page 24 line 8-11, the purpose of the model is to forecast where there is going to be empty trailers in the future in an LTL network.

Muralidharan does not teach where the position information used for each LTL

trailer is GPS position information. The network assumes that trailer travel time between terminals is fixed. Muralidharan does teach that there is a need to provide real time tracking (i.e. position information) for trucks in an LTL network based on input from GPS systems, because the advent of the GPS technology has made it readily available to know where vehicles are in real time. Muralidharan teaches there is a need to account for real time GPS into modeling because of the dynamic nature of the operation of LTL networks (see page 1 line 1-8).

It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the teachings of Muralidharan regarding simulating an LTL network using capacity and position information for trailers in the network, to include where the position information includes GPS position information, because it would improve transportation planning by taking into account the dynamic nature of shipping over an LTL network.

Regarding **Claim 2**, Muralidharan teaches:

wherein computing the projection of available carrier capacity comprises estimating future positions of one or more of the mobile carrier entities.

Page 11 line 13-15, the future positions of the closed trailers (i.e. those that will be full) is estimated in the next 24 to 48 hours so that other trailers can be moved into place to provide the needed capacity.

Regarding **Claim 3**, Muralidharan teaches:

wherein future positions of one or more of the mobile carrier entities are estimated at one or more times within pickup time windows specified for each of the freight haulage jobs.

Page 15 line 1-3, the model predicts the number of trailers at the various terminals (i.e. positions) that will be closed (i.e. fully loaded according to the time window constraints specified on page 28 line 1-20. The pickup time window is forecasted as per page 33 line 10-12 as the time a trailer can wait for freight bills before being closed.

Regarding **Claim 4**, Muralidharan teaches:

wherein future positions of one or more of the mobile carrier entities are estimated based at least in part upon current transport condition information.

Page 32 line 17-20, the future position of a trailer, based on when it leaves the terminal to meet service requirements (i.e. transport condition information) is estimated by the simulation.

Regarding **Claim 5**, Muralidharan teaches:

wherein the freight haulage job candidates are identified based at least in part upon the proximity of the estimated mobile carrier entity positions to pickup locations specified for each of the freight haulage jobs.

Page 32 line 20, the bills (i.e. representing the LTL freight haulage jobs) have

origins where they are picked up. – line 15, the trailers used to transport these bills are identified both based on their origin and their location (i.e. proximity) at any of the terminals between origin and destination (see page 30 line 1-5, opportunistic direct service is based on the trailer being located such that it can pick up bills enroute).

Regarding **Claim 6**, Muralidharan teaches:

wherein the received excess capacity information includes amount of available capacity and mode of transport.

Page 32 line 15-20, each trailer has a certain amount of available capacity, based on the loads it is carrying – for this simulation the mode of transport is LTL trailers.

Regarding **Claim 7**, Muralidharan teaches:

wherein the freight haulage job candidates are identified based at least in part upon a comparison of the received excess capacity information and an amount of needed capacity and mode of transport specified for each of the freight haulage jobs.

Page 29, line 9-13, trailers are identified based on the excess capacity information and the amount of capacity needed for the bills to be shipped – note the discussion on page 32 line 14-19 of the trailer objects (each trailer is modeled as an object with a weight and volume capacity) and the bill objects (the freight haulage jobs, where each bill represents a weight and volume required to be shipped according to

LTL, the mode of transport).

Regarding **Claim 8**, Muralidharan teaches:

computing an amount of capacity available on a given mobile carrier entity based upon excess capacity information received from the given mobile carrier entity.

Page 29 line 9-13, capacity available is computed based on the excess capacity information received from the trailer object – see page 32 line 14-18, the trailer object contains what bills (i.e. freight) the trailer is carrying and what the available capacity is.

Regarding **Claim 9**, Muralidharan teaches:

wherein the excess capacity information received from the given mobile carrier entity haulable by the given mobile carrier entity and volume information and weight for each item of freight being hauled by the given mobile carrier entity.

Page 32 line 14-19, each trailer object provides information for the bills (i.e. the LTL pieces of freight the trailer is carrying) that includes what the weight and volume of the bills are and the total weight and volume carried in the trailer.

Muralidharan does not teach receiving from the mobile carrier entity (i.e. the trailer object what the maximum volume information and maximum weight of the trailer is, because Muralidharan assumes that each trailer has the same load and volume

capacity.

However it would be obvious to one of ordinary skill in the art at the time of the invention to include for each of the trailer objects in the simulation a maximum weight and volume because it is old and well known in the art that there are different sizes of trailers used in LTL freight transport and this would accurately account for the size and weight of those different size trailers in the simulation.

Claims 10-17 recite similar limitations as those recited in **Claims 1-9** above, and are therefore rejected under the same rationale.

5. **Claims 18-24** are rejected under 35 U.S.C. 103(a) as being unpatentable over **Muralidharan** in view of Leavitt, Wendy; "All Work and Play", Nov 2000, Fleet Owner, 95, 11; ABI/INFORM Global, p.75 (hereinafter **Leavitt**).

Regarding **Claim 18**, Muralidharan teaches receiving from a mobile carrier entity (i.e. trailers) capacity attributes including position information, route information and excess capacity information, for a mobile carrier entity (i.e. a trailer) as discussed above for Claim 1.

Muralidharan suggests that advances in technologies provide real time information from mobile carrier entities including GPS positioning information (see page

1 line 1-5).

Muralidharan teaches the use of GPS systems and real time information will improve shipment consolidation and help truck carriers optimize their distribution networks in terms of cost. Muralidharan utilizes the specific weight and volume capacity from an individual truck to determine if that truck can carry a particular freight haulage job.

Muralidharan suggests the advantages in optimizing freight networks using advanced technology but does not teach:

A portable device, comprising: a portable housing incorporating a display screen and one or more control buttons; a memory in the housing; a wireless transceiver in the housing; a positioner in the housing and operable to compute position information; a scanner in the housing and operable to direct a light beam at a symbol and to recover information embedded in the symbol based upon detected reflections from the symbol; and a controller in the housing and coupled to the memory, the wireless transceiver, the positioner, and the scanner and operable to obtain from the scanner capacity attributes, and to control wireless transmission of the capacity attributes through the wireless transceiver in accordance with a mobile wireless communication protocol.

Leavit teaches:

A portable device, comprising:

a portable housing incorporating a display screen and one or more control buttons;

page 76 column 1 para 1, the truck productivity computer contains a display and numerous interfaces (column 2 para 2), e.g. a handheld computer contains at least one control button (i.e. a keyboard).

a memory in the housing;

page 76, column 1 para 1, the truck productivity computer is running Windows CE in its memory (i.e. in the housing).

a wireless transceiver in the housing;

page 76 column 1 para 1, the truck productivity computer contains a communications interface to interact with (column 2 para 1) Qualcomms satellite network using a cellular communications protocol (CDPD) using a modem (i.e. a wireless transceiver).

a positioner in the housing and operable to compute position information;

page 76 column 1 para 1, GPS is a positioner that computes position information.

a scanner in the housing and operable to direct a light beam at a symbol and to recover information embedded in the symbol based upon detected reflections from the symbol;

page 76 column 2 para 2, the truck productivity computer can interface with a bar code scanner (i.e. which recovers information embedded in a bar code symbol based upon detected reflections from the symbol).

and a controller in the housing and coupled to the memory, the wireless

transceiver, the positioner, and the scanner and operable to obtain from the scanner capacity attributes, and to control wireless transmission of the capacity attributes through the wireless transceiver in accordance with a mobile wireless communication protocol.

Page 76 column 2 para 2, 3; the modem communication is according to a mobile wireless communication protocol (i.e. CDPD or CDMA). The truck productivity computer is coupled to the memory, the modem (i.e. the transceiver) and the bar code scanner and can perform a multiplicity of functions including (page 76 column 3 para 1) transmitting position information and downloading and transmitting information (i.e. capacity attributes) from bar code scanners.

Leavitt teaches the use of wireless communications provide real time connectivity to fleet operations (page 75 column 1 para 2).

Leavitt and Muralidharan both address the optimization and improvement of the shipping of freight, thus both Leavitt and Muralidharan are analogous art.

One of ordinary skill in the art would modify the teachings of Muralidharan, regarding obtaining information from a specific trailer noting the position of the trailer and the available capacity on the trailer, both in terms of weight and freight, to include the teachings of Leavitt, regarding providing the mobile wireless computing technology

(including barcoding) to provide information from the truck including regarding it's position, because it would improve the operation of a trucking network by enhancing the real time dynamic decision tool taught by Muralidharan regarding optimizing a shipping network.

Regarding **Claim 19**, as noted above, both Muralidharan and Leavitt both teach the use of a positioner that is a GPS receiver.

Regarding **Claim 20**, Muralidharan teaches the computing of excess capacity based on the weight and volume of an LTL trailer and the bills (i.e. pieces of LTL freight), as noted in **claim 9**.

Muralidharan teaches the need to obtain dynamic information from an LTL carrier because this information can improve the managing and optimization of an LTL network (page 1 line 1-7).

Muralidharan does not teach where the computer (i.e. the portable device) computes this information from the freight items scanned into the computer.

Leavitt teaches that providing a computer with wireless connection to a network provides for improved communication with the truck so that dynamic position information and other information can be received from the truck. Leavitt teaches that

this information includes using a scanner to scan and transmit information.

It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the teachings of Muralidharan, regarding computing excess capacity based on the weight and volume capacity of a truck and the associated pieces of freight the truck is carrying, to include where this information comes from the truck's wirelessly connected scanner, as taught by Leavitt, because Muralidharan teaches that obtaining dynamic information from a truck in an LTL network helps optimize that network, and Leavitt teaches that providing trucks with wireless applications provides real-time information about all aspects of the truck (including the load – see page 75 column 1 para 2). There is a reasonable expectation of success in combining Muralidharan with Leavitt because it would enable the real-time, dynamic optimization of a freight network by receiving load information from a truck through the wireless computing, positioning and scanning hardware taught by Leavitt.

Regarding **Claim 21**, Muralidharan teaches the need to obtain capacity attributes but does not teach prompting users to enter capacity attributes.

Muralidharan teaches the need to obtain dynamic information from an LTL carrier because this information can improve the managing and optimization of an LTL network (page 1 line 1-7).

Leavitt teaches the need to prompt users to enter information (page 76 column 3 para 2).

Leavitt teaches that providing a computer with wireless connection to a network provides for improved communication with the truck so that dynamic position information and other information can be received from the truck.

It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the teachings of Muralidharan, regarding computing excess capacity based on the weight and volume capacity of a truck and the associated pieces of freight the truck is carrying, to include where this information comes when prompted by the user to enter it, because Muralidharan teaches that obtaining dynamic information from a truck in an LTL network helps optimize that network, and Leavitt teaches that providing trucks with wireless applications provides real-time information about all aspects of the truck (including the load – see page 75 column 1 para 2) and that users can be prompted via messaging to enter information about their truck. There is a reasonable expectation of success in combining Muralidharan with Leavitt because it would enable the real-time, dynamic optimization of a freight network by receiving load information from a truck through the wireless communication hardware taught by Leavitt.

Regarding **Claim 22**, Muralidharan teaches:

selecting one of the identified freight haulage job candidates to perform a particular one of the freight haulage jobs.

Page 29 line 9-13, a particular trailer (i.e. a job candidate) is selected to handle a particular job (i.e. a freight bill).

Regarding **Claim 23**, Muralidharan does not teach:

receiving haulage rates from the identified freight haulage job candidates, wherein the selecting is based at least in part on the received haulage rates.

Page 35 para 3.5 line 1-3, the selection of trailers is based at least in part based on their cost (i.e. their rate) and the effect that selection has (based on a host of other factors as well) has on the overall system cost. – see also page 52 line 20, the cost of an individual trailer is based on the cost of its routing (i.e. a haulage rate for that individual trailer).

Regarding **Claim 24**, Muralidharan teaches:

wherein the excess capacity information is expressed in terms of volume and weight available on respective ones of the mobile carrier entities.

Page 32 line 14-19, the excess capacity information is expressed in terms of the total volume and weight available on the individual trailer.

Conclusion

6. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Ichoua, Soumia, et al. "Diversion Issues in Real-Time Vehicle Dispatching", Nov 2000, Transportation Science, 34, 4; ABI/INFORM Global, p.426.

Mele, Jim; "A New Wireless World", June 2001, Fleet Owner, Overland Park, Vol. 96, Iss. 6, p.88, ProQuest ID 74324501.

Cheung, Raymond K; Muralidharan, B.; "Dynamic Routing for Priority Shipments in LTL Service Networks", Feb 2000, Transportation Science, 34; 1, ABI/INFORM Global, p.86.

Cheung, Raymond K; Muralidharan, B.; "Impact of Dynamic decision making on hub-and-spoke freight transportation networks", 1999, Annals of Operations Research, 87, ABI/INFORM Global, p.49.

US 2002/0138352 by Dimaggio discloses a method and system for managing freight operations.

7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jonathan G. Sterrett whose telephone number is 571-272-6881. The examiner can normally be reached on 8-6.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's

supervisor, Tariq Hafiz can be reached on 571-272-6729. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

JGS 5-20-2007

Romain Jeanty
Primary Examiner
Art Unit 3623